

Title (en)  
LIQUID CRYSTAL DEVICE

Title (de)  
FLÜSSIGKRISTALLVORRICHTUNG

Title (fr)  
DISPOSITIF À CRISTAUX LIQUIDES

Publication  
**EP 2950137 A4 20161221 (EN)**

Application  
**EP 14743147 A 20140127**

Priority  
• KR 20130008603 A 20130125  
• KR 2014000764 W 20140127

Abstract (en)  
[origin: US2015131033A1] A liquid crystal device, a precursor composition, a method of manufacturing a liquid crystal device, an apparatus of manufacturing a liquid crystal device, and use of the liquid crystal device are provided. A device capable of being driven at a low driving voltage can be provided. The device can be realized so that the device can be driven in a normally transparent mode or a normally black mode. Also, the device has other excellent characteristics such as a contrast ratio. Such a liquid crystal device can be applied to various light modulation devices such as smart windows, window-protecting films, flexible display devices, active retarders for displaying 3D images, or viewing angle-adjusting films.

IPC 8 full level  
**C09K 19/40** (2006.01); **C09K 19/52** (2006.01); **C09K 19/54** (2006.01); **G02F 1/1334** (2006.01); **G02F 1/1337** (2006.01)

CPC (source: CN EP US)  
**C09K 19/408** (2013.01 - EP US); **C09K 19/52** (2013.01 - CN EP US); **C09K 19/544** (2013.01 - EP US); **G02F 1/1334** (2013.01 - CN EP US); **G02F 1/13345** (2021.01 - CN EP US); **G02F 1/13347** (2021.01 - EP US)

Citation (search report)  
• [X1] WO 2009076127 A1 20090618 - 3M INNOVATIVE PROPERTIES CO [US]  
• [XAI] CN 102643387 A 20120822 - BOE TECHNOLOGY GROUP CO LTD  
• [XAI] JP H04156425 A 19920528 - DAINIPPON INK & CHEMICALS  
• [XAI] JP H05257134 A 19931008  
• [XAI] EP 0509465 A1 19921021 - IDEMITSU KOSAN CO [JP]  
• [XA] CHO Y H ET AL: "High performance holographic polymer dispersed liquid crystal systems using multi-functional acrylates and siloxane-containing epoxides as matrix components", APPLIED PHYSICS A; MATERIALS SCIENCE & PROCESSING, SPRINGER, BERLIN, DE, vol. 83, no. 3, 1 June 2006 (2006-06-01), pages 365 - 375, XP019337264, ISSN: 1432-0630, DOI: 10.1007/S00339-006-3495-2  
• See references of WO 2014116076A1

Designated contracting state (EPC)  
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)  
**US 10329485 B2 20190625; US 2015131033 A1 20150514**; CN 104641282 A 20150520; CN 104641282 B 20170524; EP 2950137 A1 20151202; EP 2950137 A4 20161221; EP 2950137 B1 20190626; JP 2015529349 A 20151005; JP 6049884 B2 20161221; KR 101422441 B1 20140722; TW 201504407 A 20150201; TW I496876 B 20150821; WO 2014116076 A1 20140731

DOCDB simple family (application)  
**US 201514602056 A 20150121**; CN 201480002386 A 20140127; EP 14743147 A 20140127; JP 2015531027 A 20140127; KR 2014000764 W 20140127; KR 20140009876 A 20140127; TW 103103023 A 20140127